

# Impact of Antimicrobial Stewardship Program

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# Objectives

- Provide an overview on antimicrobial stewardship programs (ASP)
- Describe the antimicrobial stewardship program at Tampa General Hospital (TGH) and its progression
- List the strategies used to improve antimicrobial prescribing at TGH

# Antimicrobial Stewardship Program

- Program to change and direct antimicrobial use at a healthcare institution
- Utilize a multidisciplinary team
- Goals:
  - Appropriate antimicrobial treatment
  - Optimize drug dosing and duration
  - Improve patient safety
  - Reduce antimicrobial resistance

# Background

- Significant number of hospitalized patients receive anti-infective agents
- Decrease in anti-infective agent production
- Increase in antimicrobial resistance
  - MRSA
  - VRE
- Healthcare costs



# Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America Guidelines for Developing an Institutional Program to Enhance Antimicrobial Stewardship

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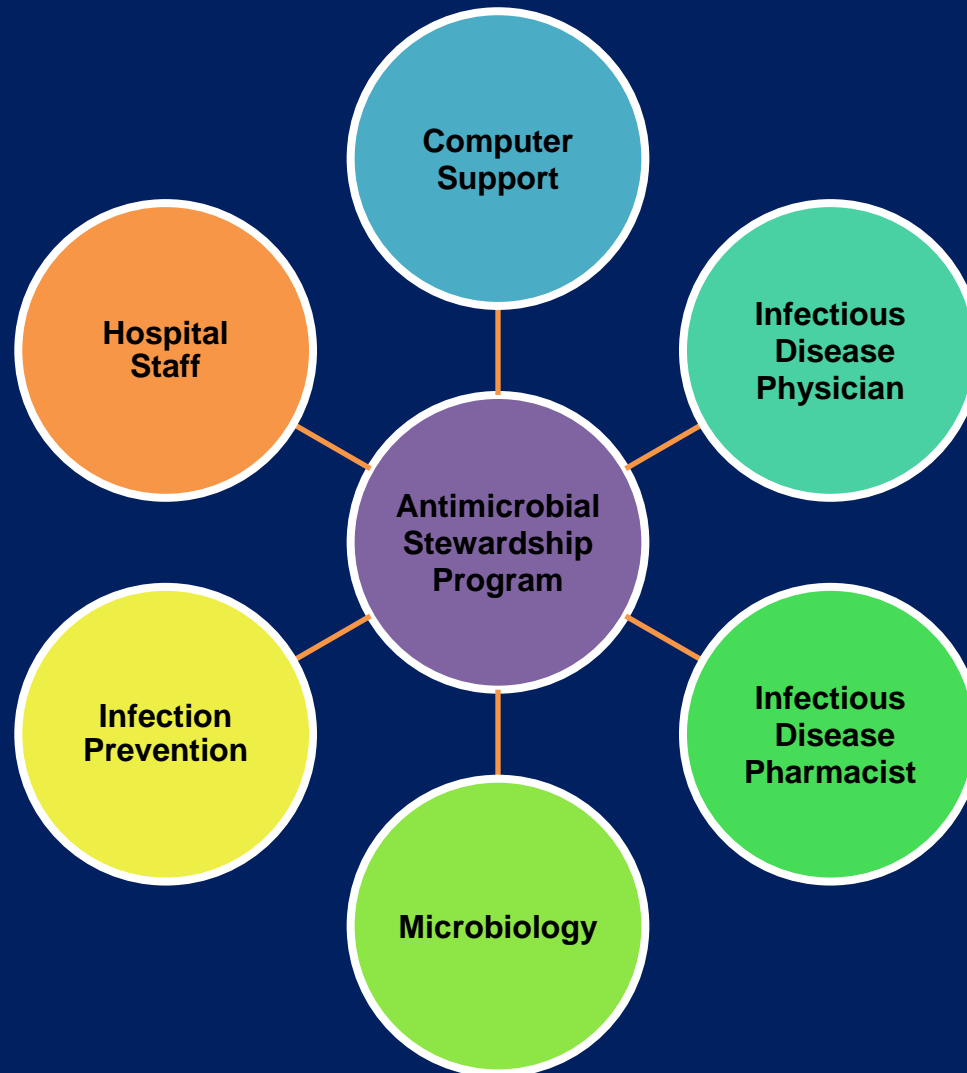
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# Benefits of Antimicrobial Stewardship Program

- Improve patient care
- Impact antimicrobial resistance patterns
- Decrease the use of antimicrobial agents
  - \$200,000 – \$900,000 annual savings in smaller community hospitals and larger academic hospitals

# Multidisciplinary Team



# Tampa General Hospital

- 1,018 bed hospital
- Level I trauma center
- Anti-infective agents are commonly prescribed  
multiple infectious disease (ID) teams

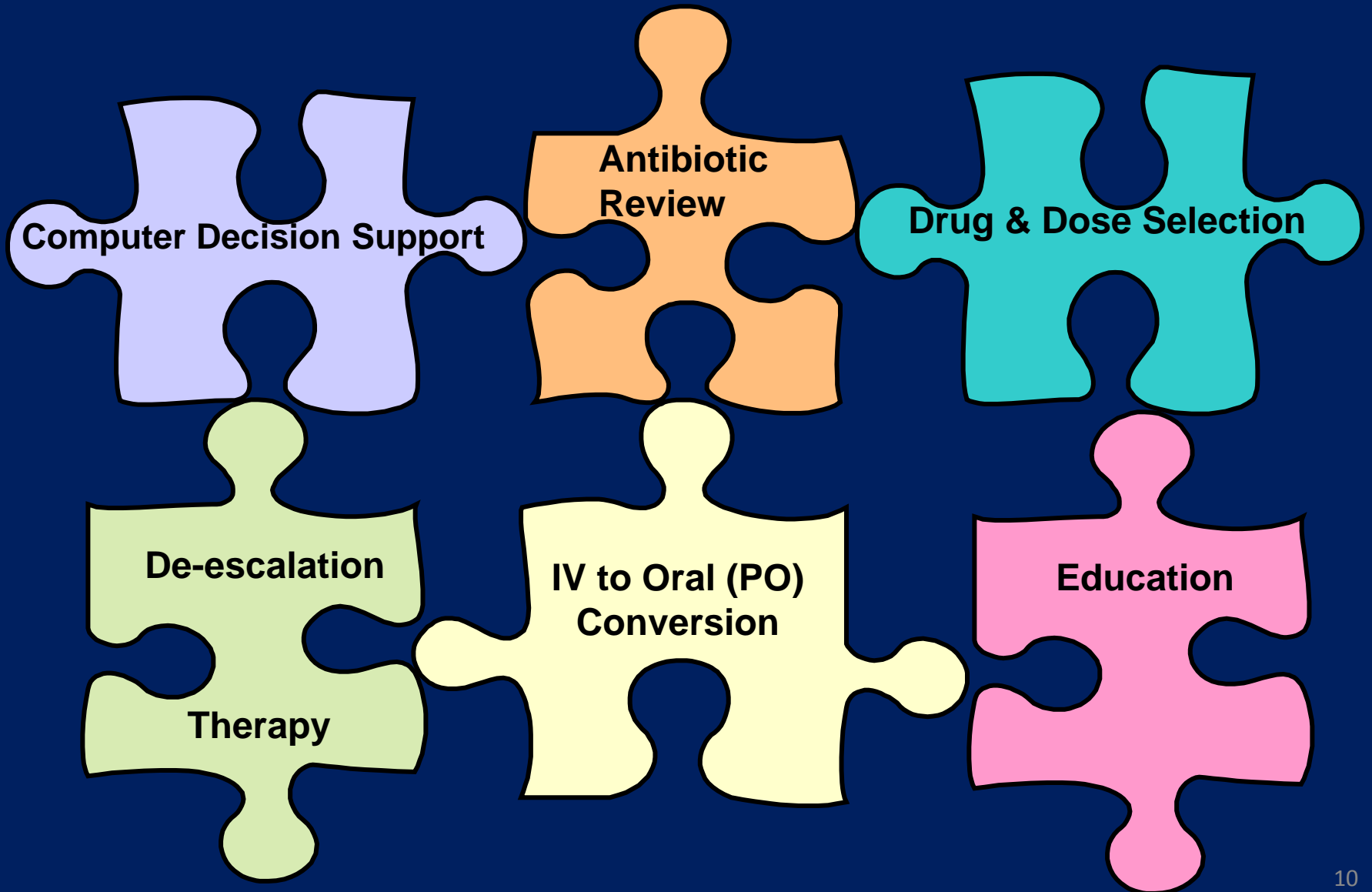




# Antimicrobial Stewardship Program (ASP)

- Initiated in 2010
- One ID physician and one ID pharmacist
- No restrictions of anti-infective agents
- Duplicate agents on formulary
- Approximately 60 percent of hospital received at least one anti-infective
- Paper chart system

# Strategies



# Year One

- Build relationships between providers and ASP team members
- Implement policies to optimize anti-infective therapy
  - IV to PO
  - Assist with OB/GYN with Group B Strep
  - Update order sets
- Utilize electronic clinical intervention surveillance system to create clinical alerts, blood culture lists, and vancomycin therapeutic drug monitoring lists

# Year One

- Created the Antimicrobial Subcommittee
  - Comprised of various physicians, pharmacists, and other areas
  - Help to make decisions on formulary and policies related to anti-infective agents
  - Functions as a subcommittee to Pharmacy and Therapeutics committee

# Year 2

- Transition to an electronic medical record (EMR) system
- Educate pharmacy residents and ID fellows through lectures clinical interventions, and clinical rotations for pharmacy residents
- Develop business proposal to expand ID pharmacist staff

# Year 2

- Utilize EMR to support the Surgical Care Improvement Project (SCIP)
- Update EMR order sets
- Create ASP webpage
- Educate medical residents via grand rounds and presentations
- Build and strengthen relationships with the IT support to support EMR

# Year 3

- Increase ID pharmacist staff from one to two to support goals of ASP
- Include a requirement for an indication to be selected for targeted anti-infective agents upon EMR order entry
- Adjust EMR report to display the selected indication for each anti-infective to support optimal dosing

# Year 3

- Provide education to pharmacists regarding SCIP measures related to anti-infective agents for inpatient
- Use electronic surgery to gauge pharmacists' interest in various ID topics and determine topics of focus for the ASP
  - Development of clinical pathways
  - Education on antibiotic resistance
  - Overview of available antibiotics
  - HIV education
  - Developing a policy to standardize anti-infective dosing
    - Allowing pharmacists to make renal dose adjustments without contacting the ordering provider



# Year 4

- Develop an ID lecture series
- Adjust ASP strategy from utilizing medication lists to reviewing each patient receiving an anti-infective
- Add anti-infective columns in the EMR patient list view to show the antibiotic, anti-viral, and anti-fungal agents
- Implement weekly standing huddle with various pharmacists who round with medical teams

# Year 5 to Current

- Integrating day time pharmacy staff into certain stewardship activities
- Introduce fecal microbiota transplantation (FMT) for certain *C. difficile* infected patients
- Restriction of certain agents by Infectious Diseases and/or ASP
- Updating metrics and developing an ASP/EMR workflow
- Collaborating with Intervention Radiology and Orthopedic Trauma

# Elements for Success

- Effective communication
- Providing positive feedback to pharmacy staff members
- Respecting those who want to practice autonomy in their respective area

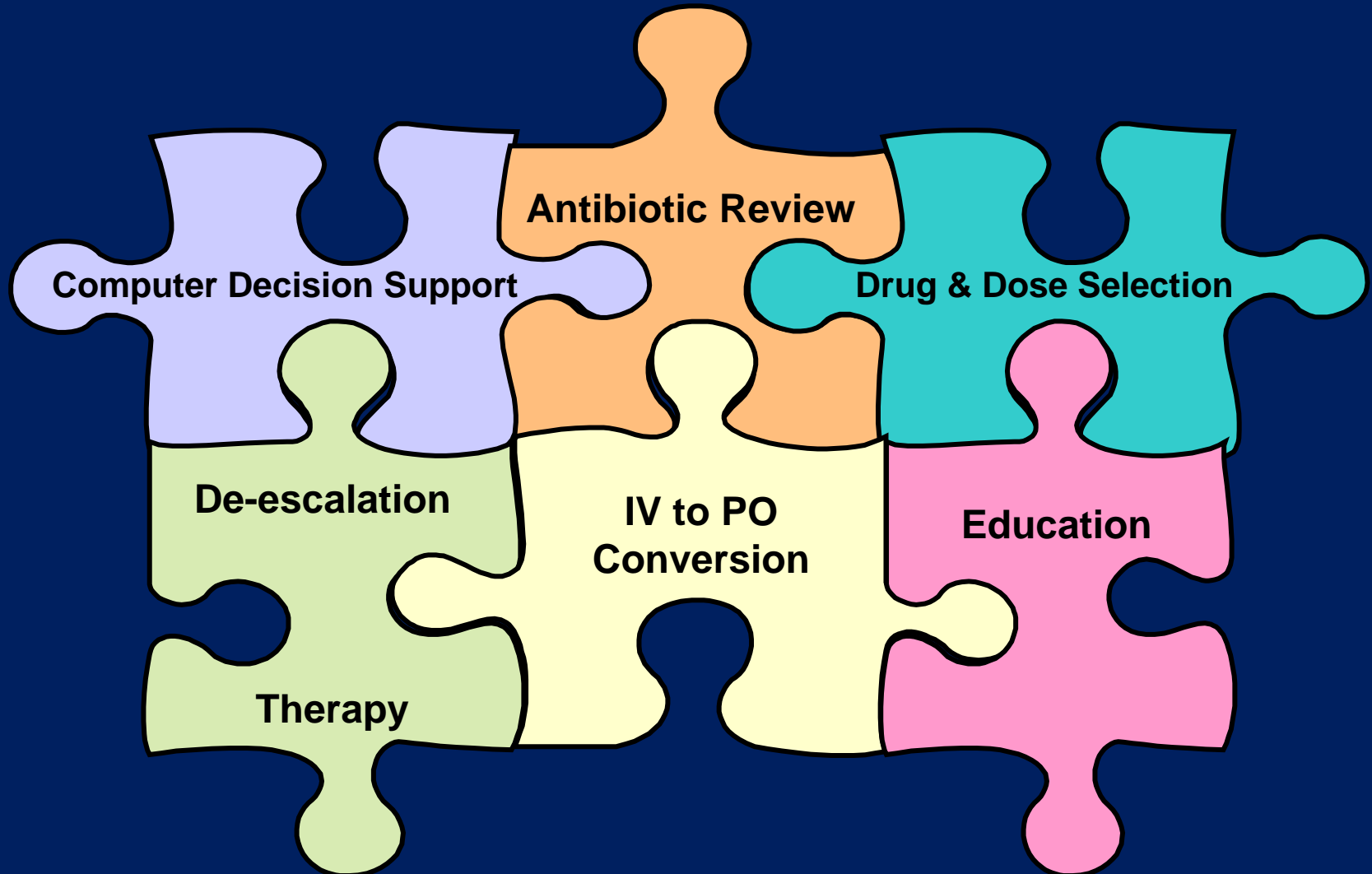
# ASP and Microbiology

- Collaborate closely with Microbiology for trends and updating panels
- Antibiogram development
- Assist in evaluating certain patients to ensure optimal therapy
- Microbiology part of Antimicrobial Subcommittee

# ASP and Infection Prevention

- Work closely to review certain patient cases to identify where anti-infective agents could have been optimized
- Communicate anti-infective shortages
- Part of infection prevention meetings

# Impact of Antimicrobial Stewardship Program



# Results

- Decrease anti-infective expenditure significantly
- Decrease anti-infective percentage from 60 percent to 55 percent despite increasing census per year
- Improved utilization with various agents such as daptomycin, linezolid, meropenem, micafungin, etc.

# Barriers

- Changing the culture about anti-infective prescribing takes time
- Various types of providers at TGH
  - Academic and private
- Developing metrics to show the impact of ASP besides financial impact
- Need full-time IT support to help with EMR and ASP endeavors



# Summary

- Customize ASP based upon your institution
  - Each institution may have different issues
- Involve key players that can help your stewardship program
- Identify how to develop metrics

A serene night landscape of a lake. The sky is a deep, dark blue, and a bright full moon hangs in the center, its light reflecting as a vertical column on the calm water. The lake is surrounded by dark, silhouetted pine trees on the left and right. In the foreground, several large, smooth, grey rocks are scattered across the water's edge. The overall mood is peaceful and quiet.

**Questions ?**